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## A D V E R T I S E M E N T.

M. JOHN Hyacinth De Magellan, in London, having sometime ago offered, as a donation, to the American Philosophical Society, held at Philadelphia for promoting useful knowledge, the sum of two hundred guineas, to be by them vested in a secure and permanent fund, to the end that the interest arising therefrom should be annually disposed of in premiums, to be adjudged by the society, to the author of the best discovery, or most useful invention, relating to navigation, astronomy, or natural philosophy (mere natural history only excepted) and the society having accepted of the above donation, hereby publish the conditions, prescribed by the donor, and agreed to by the society, upon which the said annual premiums will be awarded.

1. The candidate shall send his discovery, invention or improvement, addressed to the President, or one of the Vice Presidents of the society, free of postage or other charges; and shall distinguish his performance by some motto, device or other signature, at his pleasure. Together with his discovery, invention or improvement, he shall also send a sealed letter, containing the same motto, device or signature, and subscribed with the real name, and place of residence of the author.

2. Persons of any nation, sect or denomination whatever, shall be admitted as candidates for this premium.

3. No discovery, invention or improvement shall be entitled to this premium which hath been already published, or for which the author hath been publicly rewarded elsewhere.

4. The candidate shall communicate his discovery, invention or improvement, either in the English, French, German or Latin language.

5. All such communications shall be publicly read, or exhibited to the society, at some stated meeting, not less than one month previous to the day of adjudication, and shall at all times be open to the inspection of such members as shall desire it. But no member shall carry home with him the communication, description or model, except the officer to whom it shall be intrusted; nor shall such officer part with the same out of his custody, without a special order of the society for that purpose.

6. The

6. The society having previously referred the several communications, from candidates for the premium then depending, to the consideration of the twelve counsellors and other officers of the society, and having received their report thereon, shall, at one of their stated meetings, in the month of December, annually, after the expiration of this current year (of the time and place, together with the particular occasion of which meeting, due notice shall be previously given, by public advertisement) proceed to the final adjudication of the said premium: and after due consideration had, a vote shall first be taken on this question, viz. Whether any of the communications then under inspection be worthy of the proposed premium? If this question be determined in the negative, the whole business shall be deferred till another year: but if in the affirmative, the society shall proceed to determine by ballot, given by the members at large, the discovery, invention or improvement, most useful and worthy; and that discovery, invention or improvement, which shall be found to have a majority of concurring votes in its favour shall be successful; and then, and not till then, the sealed letter, accompanying the crowned performance, shall be opened, and the name of the author announced as the person entitled to the said premium.

7. No member of the society who is a candidate for the premium then depending or who hath not previously declared to the society, either by word or writing, that he has considered and weighed, according to the best of his judgment, the comparative merits of the several claims then under consideration, shall sit in judgment or give his vote in awarding the said premium.

8. A full account of the crowned subject shall be published by the society as soon as may be, after the adjudication, either in a separate publication, or in the next succeeding volume of their transactions, or in both.

9. The unsuccessful performances shall remain under consideration, and their authors be considered as candidates for the premium, for five years, next succeeding the time of their presentment; except such performances as their authors may, in the mean time, think fit to withdraw. And the society shall, annually, publish an abstract of the titles, object or subject matter of the communications so under consideration; such only excepted as the society shall think not worthy of public notice.

10. The letters containing the names of authors whose performances

shall

shall be rejected, or which shall be found unsuccessful, after a tryal of five years, shall be burnt before the society, without breaking the seals.

11. In case there should be a failure, in any year, of any communication worthy of the proposed premium, there will then be two premiums to be awarded in the next year. But no accumulation of premiums shall entitle an author to more than one premium for any one discovery, invention or improvement.

12. The premium shall consist of an oval plate of solid standard gold, of the value of ten guineas, on one side thereof shall be neatly engraved a short Latin motto, suited to the occasion, together with the words—The premium of John Hyacinth De Magellan, of London, established in the year 1786. And on the other side of the plate shall be engraved these words. Awarded by the A. P. S. — for the discovery of——A. D.

And the seal of the society shall be annexed to the medal by a ribbon passing through a small hole at the upper end of the plate.

*The following communications from candidates for the Magellanic annual premium, remain under consideration.*

1. An essay on warming rooms. *Motto, Cuique eveniat semper prout meruit.* Read May 20, 1791.

The author proposes, as an addition to the Franklinian fire-place, or open stove, that the fresh air necessary to feed the fire, be admitted from without, through tin pipes, placed under the floor, and rising up through the hearth at one side of the stove, where they communicate with iron pipes passing thro' the fire as a grate. These iron pipes again communicate with tin ones, extending up behind the wainscot, nearly to the ceiling, where the air, now heated by passing through the fire, is suffered to escape into the room. By this contrivance, the inconvenience arising from the rushing in of cold air from without, through every crevice and aperture where it can find a passage, will, it is alledged, be effectually prevented, and the room keep warm with much less expence of fuel than in the common way.

2. An attempt to prove that the generally received opinion, that steel springs acquire an increase of strength or power by cold weather, and lose power by warm weather, is erroneous—Signature *Scrupulous*—Read November 4, 1791.

The writer endeavours to establish this position, both from theory and experiment.—Heat expands and cold contracts a spring, or any other piece of metal proportionally, in all its dimensions; and therefore, while cold makes a spring shorter, and on that account would increase its power, it also makes it both narrower and thinner, and on this account would diminish its power, in the same proportion; accordingly, by experiment, he found that a spring of twelve inches long, made fast at one end, and having a weight suspended from the other, did not suffer the weight visibly to descend, upon being heated even to such a degree as to evaporate a drop of water applied to it. If the above position be true, the *thermometer-curb*, applied to Harrison's and other time-pieces, instead of being an advantage, must be directly the contrary.

3. A description, accompanying a model of a machine, which the author calls an *Elevator*—Motto, *Nititur in ardua Virtus*—Read December 2, 1791.

The machine is a compound of perpendicular shafts, so connected by grooves, ropes and pulleys, that each moves its inmate, and thus all rise together.

"This machine," the author observes, "may be applied to many important uses—A person of common weight may ascend an hundred feet upon a frame of light construction to gain a rocky precipice, to enjoy a fine prospect, to reconnoitre the encampment of an enemy, and to discover land at sea.—Dispatch in loading and unloading, or any quick alternate motion, is well performed by the multiple motion of this elevator."

4. A description with a model of a mechanical apparatus for regulating and governing the sails of a vessel at sea—Signature I. S. S.—Read November 2, 1792.

The author proposes, that each sail be placed within a large frame turning round on pivots at the top and bottom. At the extremity of the upper pivot or gudgeon is fixed a cog or spur wheel, which is turned by another wheel having half the number of teeth, and this supports a large vane, about one fifth of the size of the sail, which is turned round with the wind. By this means the angular motion of the sail will be but half that of the vane. Hence if the wind when directly astern, be at right angles with the plane of the sail, a side wind would strike the plane of the sail at an angle of forty-five degrees, and a wind four points before the beam, would strike the sail at an angle of two points and an half; and thus, it is presumed, that the mere action of the wind upon the

vane, would always turn the sails into their proper position, without any manual operation whatever. He also proposes a method of furling the sails by means of rollers, to be worked with cranks.

5. An improvement in the art of guaging. Signature W.—Read November 16, 1792.

The author points out various sources of error in the present practice of guaging, particularly taking the dimensions outside of the cask. He gives a drawing and description of an instrument for taking the necessary dimensions, viz. The length, head-diameter, bung-diameter, and a middle diameter between the head and bung, all inside of the cask; and by means of a table which he has subjoined, shews how to compute the contents of any cask from these dimensions, with the greatest ease and accuracy.

Besides the above communications, an essay on the causes of the tides has been received, but not being within the limited time, was not brought under consideration at the last adjudication.

Several other pieces have been before the Society, but as their time of probation (five years) will expire before the next adjudication, in December 1793, they are of course decisively unsuccessful, and need not be noticed.

Published by order of the Society,

JAMES HUTCHINSON,  
SAMUEL MAGAW, }  
J. WILLIAMS, Jun.      } Secretaries.

*END OF THE THIRD VOLUME.*